

## PATENT ABSTRACTS OF JAPAN

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## (54) TRANSFER OF PATTERN

## (57)Abstract:

PURPOSE: To apply a beautiful and durable pattern to the surfaces of all of places or articles such as the inner and outer surfaces of a completed building, a vehicle or an elevator, a fabric of a kimono or an obi, a shutter or road by a relatively simple technique without requiring special equipment.

CONSTITUTION: Pattern paper is formed by applying an arbitrary pattern to electrostatic recording paper by printing, handwriting or color copy and bonded to a substrate being an article to be transferred by a self-adhesive or an adhesive and the electrostatic recording paper is wetted with water or other liquid to be peeled to transfer only the pattern layer to the substrate and a synthetic resin is applied to the pattern layer to form a protective film.

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1.This document has been translated by computer. So the translation may not reflect the original precisely.

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[Claim(s)]

[Claim 1] Give the pattern, pattern, etc. of arbitration to electrostatic recording paper by printing, hand-drawn, a color copy, etc., and pattern encaustic paper is created.

The pattern encaustic side of said pattern encaustic paper is stuck on the substrate which is a transferred object through a binder or adhesives. Subsequently, the imprint approaches, such as a pattern, a pattern, etc. characterized by carrying out humidity of said electrostatic recording paper with water or other liquids, exfoliating, imprinting only a pattern encaustic layer to said substrate, applying synthetic resin from on said imprinted pattern encaustic layer further, and making a protective coat form.

[Claim 2] The imprint approaches, such as a pattern, a pattern, etc. according to claim 1 that it was made to give the pattern and pattern of arbitration after applying a transparence binder, gelatin, polyvinyl alcohol, or a calcium carbonate to electrostatic recording paper beforehand.

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the imprint approach that the pattern, pattern, etc. of arbitration can be given to front faces of all bodies, such as a floor, a wall, a car, an elevator, head lining, a glass window, a tree, cloth, a hide, paper, rubber, plastics, a stone, earthenware, a metal, concrete, and a bituminous road.

[0002]

[Description of the Prior Art] Although there is a means to give a shank pattern by the imprint approach to a film, paper, cloth, etc., from the former, since these imprint approaches are what is performed through the process which predetermined followed, they are being mass-produced by works with a facility.

[0003] Therefore, it is made impossible [ \*\*\*\*\* ] to give a pattern and a pattern to the floor of the building already completed structurally, a wall, a glass window,

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lining, a wall, an elevator, the inside-and-outside side of a car, etc. by the imprint approach.

Moreover, it was made into the very difficult thing from the former for smooth nature to give clear and beautiful a pattern and a pattern to the objective front face and objective curved surface which are getting worse for irregularity (about 1–5mm) with a detailed front face.

[0004]

[Problem(s) to be Solved by the Invention] This invention is made for the purpose of solving the conventional trouble which was described above, and surface smooth nature also tends to provide simply the inside-and-outside front face of arbitration, such as an already completed building, a car, and an elevator, with the new imprint approach that the imprint of a pattern and a pattern is possible, even to a bad substrate and a bad curved surface again.

[0005]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, when it inquired wholeheartedly and electrostatic recording paper was removed, giving a pattern and a pattern to electrostatic recording paper with various means, such as printing, a color copy, and hand-drawn, sticking this on the substrate of a transferred object, and carrying out humidity with the liquid of water or a solvent, it found out that only the layer of a pattern and a pattern could imprint to a substrate.

[0006] Namely, this invention gives the pattern, pattern, etc. of arbitration to electrostatic recording paper by printing, hand-drawn, a color copy, etc., and creates pattern encaustic paper. The pattern encaustic side of said pattern encaustic paper is stuck on the substrate which is a transferred object through a binder or adhesives. Subsequently, humidity of said electrostatic recording paper is carried out with water or other liquids, it exfoliates, and only a pattern encaustic layer is imprinted to said substrate, and let the imprint approaches, such as a pattern, a pattern, etc. characterized by applying synthetic resin from on said imprinted pattern encaustic layer further, and making a protective coat form, be summaries.

[0007] The electrostatic recording paper in this invention is sold by the trade name of "electrostatic recording paper" from many paper manufacture firms and copying machine manufacturers, and the matter (for example, conductor powder) which has the property of making the electrified matter adhering is usually applied to the front face of with a thickness [ 30–60micro ] paper material.

[0008] This invention gives the pattern and pattern of arbitration first to this

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electrostatic recording paper, and creates pattern encaustic paper. As long as this pattern and pattern are printing performed with the ingredient which uses an oily pigment as a principal component except an aquosity color, hand-drawn, a color copy, etc., these pattern patterns may be directly given to electrostatic recording paper without pretreatment, and pattern encaustic paper may be created.

[0009] However, when giving a pattern and a pattern with ingredients, such as water color ink and an aquosity color, after applying gelatin, polyvinyl alcohol, or calcium-carbonate dispersion liquid to electrostatic recording paper beforehand, it is desirable to perform printing, hand-drawn, etc. and to consider as pattern encaustic paper. Moreover, a transperence binder is beforehand applied to electrostatic recording paper, and when giving a pattern and a pattern by the color copy which used the toner, on this transperence coat, a color copy is carried out, and a pattern and a pattern are given and it considers as pattern encaustic paper.

[0010] Next, the binder or adhesives in this invention should be chosen by the quality of the material of both the substrate which is a transferred object, and the pattern encaustic layer to imprint, and they chooses the ingredient on which both are adhered or pasted up, without committing both quality of the material. For example, when making a metal panel imprint the pattern encaustic layer by water color ink, the solvent type adhesives for metals are suitable, and when imprinting the pattern encaustic layer of a color copy to a concrete side, it is desirable to use casein, a 2 liquid type epoxy adhesive, and 2 liquid type urethane application as adhesives.

[0011] Thus, as a binder or adhesives, although solvent type adhesives and a binder, an instantaneous adhesive, emulsion type adhesives and a binder, and water-soluble adhesives and a water-soluble binder are raised, a binder and adhesives are selected, the quality of the material of both substrate and pattern encaustic layer given to this trying, and checking by coating etc.

[0012] Although these binder and adhesives are fundamentally applied on the surface of a substrate, when the pattern encaustic side of pattern encaustic paper is not committed by the solvent, they may apply solvent type adhesives to this pattern encaustic space.

[0013] It is good to use the binder or adhesives of a solvent system with which an adherence agent (binder) is applied, and adhesion (tuck) remains preferably [ when it is the matter with a hard substrate / using 2 liquid type urethane, 2 liquid type epoxy, and acrylic resin as adhesives ] even after drying on it when a substrate is weak to

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adhesion, such as a vinyl rubber system, glass, and iron.

[0014] It is suitable, if it carries out whether a gold-and-silver white foil etc. is stuck on the pattern encaustic side of a pattern's pattern encaustic paper, or each colors, such as red and white, are applied when the substrate is furthermore dirty (when dirt, such as concrete and iron, cannot come off easily), and a release paper is stuck applying a binder, drying from on this and leaving adhesion, a release paper is removed on the spot and lamination is carried out to a substrate.

[0015] When substrates are flexible things, such as paper, a hide, cloth, and synthetic leather, since flexibility will not be lost if aqueous adhesives and the binder of 1 liquid type acrylic or an urethane system are used, it will become desirable. When a substrate is not the smooth side which has irregularity, a 2 liquid type epoxy adhesive, 2 liquid type urethane application, and 2 liquid type acrylic adhesives are used. In the case of the smooth side, if soapsuds get dry that this paper will move and it will be easy to stick if a binder or adhesives was attached to the substrate upwards, soapsuds are applied and pattern encaustic paper is stuck, attachment is completed and the activity is advanced to the following procedure. In addition, when making it very beautiful like the door of a passenger car, it is good to stick delaying hardening for an instantaneous adhesive for about 2 to 10 minutes, and draining air and a liquid.

[0016] After sticking the pattern encaustic side and substrate side which were given to electrostatic recording paper as mentioned above, only electrostatic recording paper is exfoliated wetting and carrying out humidity of this electrostatic recording paper with water or other liquids. That is, while carrying out humidity with water etc. from the background (field without a pattern pattern) of electrostatic recording paper and removing electrostatic recording paper, it leaves a pattern encaustic layer in the condition of having imprinted to the substrate.

[0017] Thus, after giving a pattern pattern to a substrate, on this pattern encaustic layer, synthetic resin is applied, a protective coat is formed, and endurance is acquired. As this protective coat, when a pattern encaustic layer is aqueous, an oily synthetic-resin spreading layer is desirable, and when a pattern encaustic layer is oiliness, a water synthetic-resin spreading layer will become suitable.

[0018] For example, if a protective coat is formed with the urethane resin of a solution mold, acrylic resin, a fluororesin, etc. when a pattern pattern is water color ink, discoloration prevention and wear-resistant reinforcement will be obtained and endurance will improve. Moreover, even if the quality of the materials of a pattern pattern are a pigment, a toner, paints, a color copy, etc., the solvent of synthetic resin

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is changed according to these ingredients, a protective coat is formed, endurance, such as reinforcement and discoloration prevention, is raised, and it finishes beautifully.

[0019] When a pattern pattern is given to a flexible substrate, the thing which do not spoil the feel which a material has also as the protective coat and for which elastic urethane resin and acrylic resin are used like is desirable. In addition, in order to prevent discoloration effectively, a suitable result is obtained by applying an ultraviolet ray absorbent, a fluororesin, etc.

[0020] With the above process and procedures, this invention can carry out imprint grant of the pattern pattern at all kinds of substrate, and can imprint the pattern pattern of arbitration the interior side of the already complete building, and in an elevator or a car also on the curved surface of what kind of locations, such as a wall, a road, earthenware, a glass window, a tree, a hide, cloth, paper, rubber, concrete, plastics, a metal, and a stone, an ingredient and a solid sphere, or others again.

[0021] this invention approach is the epoch-making imprint approach, when it also constructs an activity to an easy and large location, it is possible also for hiding, inheriting, sticking and carrying out a joint, and it can also carry out the sequential imprint of the pattern pattern in piles also many [-fold].

[0022]

[Example]

The pattern pattern of a soccer game (JIKO player) was given using the color copier of a pigment method, and it considered without pretreatment on electrostatic recording paper (Fuji Xerox, Inc. make) with an example 1 thickness of 50micro as pattern encaustic paper (300mmx500mm). On the other hand, the front face of the concrete block of the same magnitude as the above is used as a substrate, a concrete sealer (Nippon Paint Co., Ltd. make; 50% of solid content) is applied to 20 g/m<sup>2</sup> as an alkali stop, as adhesives, it was wet in casein (consonance formation incorporated company 35% water solution of solid content), and it applies here at a rate of about 60 g/m<sup>2</sup> (two brush coating), hot air drying is carried out to it, and the pattern encaustic side of said pattern encaustic paper was stuck on it here.

[0023] Subsequently, when only electrostatic recording paper was exfoliated having infiltrated this electrostatic recording paper (opposite side of a pattern encaustic side), and soaking water in it, the pattern pattern of a soccer game has imprinted on the surface of the concrete block. And it was wet, aquosity polyurethane resin (neo of Otani Coating deluxe UW) of 32% of solid content was applied to 30 g/m<sup>2</sup>, it dried on

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the front face of this pattern pattern, and the protective coat was formed in it. The fluororesin (the new gar by TOHPE CORP. helmet # 2300) in which the ultraviolet ray absorbent is contained 10% was applied to 20 g/m<sup>2</sup> after the desiccation (about 10 minutes). Consequently, the beautiful concrete block of the pattern pattern of the soccer game with the wear-resistant outstanding endurance was obtained. In addition, any effect was not received in the small surface irregularity of a concrete block, either.

[0024] It pretreated by being wet on the same electrostatic recording paper as example 2 example 1, applying 10% liquid of gelatin (powder gelatin by Yasu chemical-industry incorporated company) to it at a rate of 50 g/m<sup>2</sup>, and carrying out hot air drying to it. The water soluble dye (cyanogen, a Magenta, yellow, black) of four colors was used for this pretreated electrostatic recording paper, and with the iris machine (the Marubeni electronics incorporated company marketing — USA IRIS3047 color in jet printer), \*\*\*\* printing of the masterpiece "girl Irene" (Renoir) was carried out, and it considered as pattern encaustic paper.

[0025] On the other hand, after carrying out spreading desiccation (pretreatment) of the solvent type binder for metals (the FUYUBE adhesion binder M by Kansai Paint Co., Ltd.; 40% of solid content) to the panel made from aluminum (130cmx150cm) at a rate of 10 g/m<sup>2</sup>, 1 acidity-or-alkalinity moisture hardening mold polyurethane adhesive (30% of solid content [ Consonance formation incorporated company KIYOREJIN S- 1800; ]) was applied with the spray gun at a rate of 30 g/m<sup>2</sup>. After desiccation of these adhesives (adhesiveness remains), the pattern encaustic side of said pattern encaustic paper which carried out famous picture printing was stuck.

[0026] Subsequently, when this pattern encaustic paper was wet with water like the example 1 and it exfoliated, the pattern pattern of a masterpiece "girl Irene" has imprinted to the panel made from aluminum. 2 liquid type polyurethane resin (MIKUNI paint incorporated company) of 35% of solid content was applied to the front face of this pattern pattern at a rate of 35 g/m<sup>2</sup>, it dried on it, and the protective coat was formed in it. The aluminum plate of the acquired pattern pattern is the same as the pictures of a masterpiece "girl Irene", and is very beautiful, and the abrasion resistance of this pattern pattern was also very excellent.

[0027]

[Effect of the Invention] This invention has the greatest description at the point which uses electrostatic recording paper as the imprint approach of a pattern and a pattern, sticks and imprints to a substrate the pattern and pattern given to electrostatic recording paper, this electrostatic recording paper is exfoliated, it is the approach of

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leaving only a pattern encaustic layer, and a special facility is also unnecessary and the activity is also very simple.

[0028] Therefore, the epoch-making effectiveness that the pattern and pattern of arbitration can be given to the interior, such as the interior side and sheathing side of the building completed structurally, a windowpane, an elevator, and a car, a road, all other large or narrow locations, and the front face of goods as it is also at the outstanding endurance is done so. Moreover, it is possible to give the bad substrate and bad ball of smooth nature, and a pattern pattern clear also on other curved surfaces and beautiful, it has the descriptions, like a splice imprint and a duplication imprint can also be performed, and the application range is very large.

[0029] As mentioned above, this invention can raise the fanciness for all substrates, and demonstrates advanced usefulness to an ornament related industry.

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[54]发明名称 转印图文的方法

[57]摘要

一种使用静电记录纸转印图文的方法,将所需的图文印刷、手绘或复制在该静电记录纸上,这样制成一张转印纸。借助于粘结剂把该转印纸贴在一物体的表面上,然后用水或用其它液体把该记录纸弄湿并将其剥离,这样将图文留在物体的表面上。在该物体上的图文的表面上可再涂布一层合成树脂保护膜。接收这种所需要的图案和图形的转印的物体可以是任何物体。

## 权 利 要 求 书

1、一种用于转印图文的方法，其特征在于，（a）通过将所需的图文用印刷、手绘或彩色复印等方式呈现在一静电记录纸上而得到一张转印纸；（b）借助于增粘剂或粘结剂把所说的转印纸的有图文的那一面粘贴在一物体的表面上，该物体即作为接收所转印的图文的材料；（c）然后用水或某些其它的液体把所说的静电记录纸型湿并将其剥去，只将图文层转移到所说的物体上；（d）在这样转印的图文层的表面上涂敷一层合成树脂，以形成一层保护膜。

2、按照权利要求1的用于转印图文的方法，其特征在于，在将图文呈现到所说的静电记录纸上之前，先在该静电记录纸上涂敷一种选自下列物质中的一种，这些物质包括：透明的粘合剂、明胶、聚乙烯醇和碳酸钙。

3、一种用于将图文转印到一物体的表面上的方法，其特征在于，包括下列步骤：

将所需图文呈现在一静电记录纸上，由此而得到一张转印纸；

借助于粘结剂将所说的转印纸贴到一物体的表面上；

弄湿该转印纸；

将所说的转印纸从所述物体的表面剥离，由此而将所需要的图文留在所说的物体表面上；

在所说的图文上涂布一种合成树脂，以形成一层保护膜。

4、按照权利要求3的用于转印图文的方法，其

特征在于， 将所需要的图文呈现在所说的静电记录纸上这一步骤是通过选自下列方式中的一种方式来实现的， 所说的这些方式包括印刷、手绘、复印。

5、 一种用于将图文转印到一物体的表面上的方法， 其特征不在于， 包括下列步骤：

借助于粘结剂， 将一张通过把图文呈现在一静电记录纸的表面上而获得的转印纸贴在一物体的表面上；

把所说的转印纸弄湿；

把该转印纸从所述物体的表面上剥离， 这样把图文留在该物体的表面上；

在物体表面的图文上涂布一种合成树脂， 以在该图文上形成一层保护膜。

6、 按照权利要求5 的用于转印图文的方法， 其特征不在于， 将所说的图文呈现在所说的静电记录纸上这一步骤是通过选自下列方法中的一种方法而实现的， 所说的这些方法包括印刷、手绘和复印。

## 转印图文的方法

本发明涉及一种将图文转印到各种不同物体的表面上的方法。

现有技术当中有许多不同的方法将图案和图像、文字（以下统称为“图文”）转印到各种不同的物体的表面上，由于这些转印方法需用预定的连续步骤来完成，因而这些方法仅适合于大规模的批量生产，这种批量生产要由拥有大规模的印刷机的制造者来完成。

其结果是，将图文转印到已建成的建筑物的地板、墙壁、玻璃窗、天花板、围墙等物体上以及将图文转印到电梯、升降机等物的内外表面上实际上是不可能的。

此外，在曲面上或在具有粗糙表面的物体的表面上（由于在该表面上存在约1 ~ 5 mm的细小的凹痕和凸起而使该表面粗糙）转印或施加光洁的图案通常也是很困难的。

据此，本发明的总的目的是要解决上述这些问题。

本发明的最基本的目的是提供一种新的转印方法，这种新的转印方法可将图案和包括字母、数字、文字、符号等的图形（统称为“图文”）简单地转印到任何所需的表面上，例如转印到地板、墙壁、电梯、天花板、玻璃窗、木头、布匹、皮革、纸张、橡胶、塑料、石头、陶瓷、金属、混凝土、沥清路面等等表面上，即使这些表面是弯曲的曲面、不平坦的表面或具有很差的表面光滑度。

本发明是通过使用一种静电记录纸，把要向表面上转印的图文制作在该静电记录纸上来解决上述问题的。通过各种不同的方法—包括印刷、彩色复制、手绘和其它方法将一种图文制作在该静电记录纸上。将这种带有图文的静电记录纸粘贴在接收该图文的物体的表面上，然后，在用水或一种溶剂等液体将该静电记录纸弄湿的同时把该静电记录纸剥去，只剩下图文留在该物体的表面上。

更具体地说，按照本发明，（1）用印刷、手绘、彩色复印等方式将所需图文呈现在一静电记录纸上，由此而制备一张转印纸；（2）借助于一种增粘剂或粘结剂将这样获得的带图文层的转印纸贴在其上将要转印图文的那一物体的表面上；（3）用水或其它液体将该静电记录纸弄湿并将该静电记录纸剥去，仅将带图文的图文层保留在该物体表面上。然后，用一种合成树脂覆盖被这样转印了图文层的表面，以在该物体的图文上形成一层保护膜。

以下将详细叙述本发明。

本发明中所使用的基本材料是一种由众多的造纸厂、复制机制造商等制造和销售的所谓的“静电记录纸”。

该静电记录纸的厚度为30至60微米，其表面涂覆有一层物质，例如一种导电粉等，这种物质具有这样一种特性，即：能使带电荷的物质附着于其上。

在本发明中，首先通过将所需的图文呈现在该静电记录纸上而制成一张转印张。

如果是用油基颜料（而不是用水基染料）对该图文进行印刷、手绘、彩色复制等的，则可将该图文直

接呈现在静电记录上而无需进行任何预处理。

但如果是用水基油墨、水基染料等这类材料来制作图文，则需要在预处理之后再通过印刷、手绘、彩色复制或其它方法形成该转印纸。通过在静电记录纸上涂覆明胶、聚乙烯醇或碳酸钙悬液而完成预处理，然后将图文呈现在其上。

此外，如果该图文是用有机调色剂进行彩色复印的，则应预先在该静电记录纸上涂覆一种透明的粘结剂，在这一过程之后，通过彩色复印将图文施加到这一透明涂膜的表面上，从而制造出一张转印纸。

这样，就以不同的方式获得了具有图文层（该图文层上带有图文）的转印纸。

根据物体的材料特性和将要被转印的图像层的材料特性来选择本发明所使用的用以把转印纸贴在物体的表面上的增粘剂或粘结剂。换句话说，应当选择一种能使物体和转印纸这二者进行粘结而不会破坏它们的材料特性的材料。

例如，如果要把由水基油墨形成的图文层转印到一块装饰用的金属板上（该金属板是一种可接收转印图文的材料），则一种用于金属的溶剂型粘结剂是最适用的。如果要把通过彩色复印而得到的图像转印到一个混凝土表面上，则需要用干酪素、一种两份环氧粘合剂或一种两份尿烷粘结剂作为粘结剂。

从上文可以看出，本发明中所使用的增粘剂或粘结剂可以是溶剂型粘结剂或增粘剂、迅速粘合的粘结剂（i n s t a n t a d h e s i v e a g e n t s）、乳液型粘结剂或增粘剂、水溶性粘结剂或增粘剂。在任何场合，本发明中所使用的增粘剂或粘结

剂都是根据物体的材料特性和施加到该物体表面上的图文层的材料特性通过试验来选择的。

把按照上述准则选择出来的增粘剂或粘结剂施加到物体的表面上。在转印纸上的图文的表面对于溶剂不敏感的情况下，可将溶剂型粘结剂施加到转印纸的图文的表面上而不是施加到物体的表面上。

如果物体是硬材料，则需要用一种两份尿烷粘结剂、一种两份环氧粘结剂或一种丙烯酸类粘结剂作为粘结剂。另一方面，如果物体是一种不容易粘合的材料，例如乙烯基橡胶、玻璃、铁等，则需要首先将一种胶合剂施加到物体上，然后使用溶剂型的增粘剂或粘结剂，这种溶剂型的粘结剂即使在干燥之后仍能保持粘性。

如果物体是脏的或该污物不易被从物体的表面（例如混凝土、铁等物的表面）上除掉，则在转印纸的图文面上粘贴一层金箔、银箔或白金属箔。或者，在转印纸上涂布相应的颜色—例如红色、白色等。在这一颜色上涂敷增粘剂并使其干燥，然后利用仍旧保留的粘性将一种脱模纸粘贴到图文面上。将该脱模纸剥去，然后将转印纸固定到物体上的图文转印位置上。

如果物体是一种软材料，例如纸张、皮革、布、合成革等，则使用单一液体型丙烯酸粘结剂或增粘剂或使用尿烷水溶性粘结剂或增粘剂，这是因为这些粘结剂不会引起上述软材料物体丧失柔软性。

如果物体不具有光滑的表面而是有凹痕或凸起物，则将一种两份环氧粘结剂、两份尿烷粘结剂或一种两份丙烯酸粘结剂涂布到物体的表面上，以使该表面光滑。

如果物体具有光滑表面，则涂布增粘剂或粘结剂，然后在其上涂布肥皂质的水。通过使用这种肥皂质的水，可在将转印纸粘贴到物体的表面上时很容易地将该转印纸移动，这就容易将其粘贴到一所需的位置上。当肥皂质的水干燥时就完成了转印纸的粘贴，转印过程就可进入下一个步骤。

当需要在电梯门等物体上形成非常醒目的引起人们注意的图案时，最好是借助于一种迅速粘合的粘结剂而贴附转印纸，通过使干燥推迟2~10分钟而使得在该迅速粘合的粘结剂完全干燥之前物体与转印纸之间的空气和液体被排掉。

在已经将转印纸上的图文粘贴到物体的表面上之后，用水或某些其它的液体将该转印纸弄湿，然后将该转印纸剥去。换句许说，在该转印纸的背面（即无图文的那一面）用水等液体把该转印纸弄湿，并将该转印纸剥离，仅使得其上带有图文的图文层作为被转印的图文而保留在物体的表面上。

在已经将图文转印到物体上之后，在该图文层的表面上涂覆一种合成树脂，从而形成一层保护膜。该保护膜可提高该转印图文的耐久性。

在该图文层是水基层的情况下，要求该保护膜是亲油的合成树脂涂层。如果图文层是一层油基层，则需要使用一种亲水的合成树脂涂层来形成保护膜。

例如，如果由水基油墨获得图文，则使用溶剂型尿烷树脂、丙烯酸树脂、氟树脂等形成保护膜。当使用这些材料时，可防止图文褪色并提高耐磨性，这样就提高了图文的耐久性。

换句话说，上述保护膜是根据用于被转印的图文



的材料——例如颜料、有机调色剂、色料（例如油漆、水彩）和彩色复制型材料来变换合成树脂溶剂而形成的，以提高图文的耐久性，加强图文，防止褪色，从而获得美观漂亮的成品。

如果将图文转印到软物体上，则最好使用软的尿烷树脂或丙烯酸树脂，以使得这种软材料的手感或质地都不会受损。

当需要更有效地防止图文褪色时，可使用紫外线吸收剂、氟树脂等。

利用上述的工艺方法和步骤，可将图文转印到所有类型的物体上。这样，可将任何所需的图案和图像、文字转印到已建成的建筑物的内表面上、转印到电梯和机动车的内表面上、转印到所有位置的各种类型的材料上，例如转印到外侧壁、围墙、路面、陶瓷材料、玻璃窗、木头、皮革、布、纸张、橡胶、混凝土、塑料、金属、石头等物上，还可以转印到球面和曲面上。

本发明的方法简单并可用来遮掩疤痕和接缝。此外，还可以通过将一幅图案或图像转印到另一物体上而实现多次转印。

下面将以实施例的形式对本发明作更详细而具体的说明。

#### 实施例1

用一种颜料型彩色复制器将一幅比赛中的足球球员的图像复制到一张50微米厚的静电记录纸上（该静电记录纸由富士复印株式会社<Fuji Xerox K. K.>制造），不在其上作任何预处理。这样，就得到了一张其上带有足球球员图像层的大小为300 mm × 500 mm的转印纸。

物体或接收转印图像的材料是一块尺寸与该转印纸相同（即300 mm×500 mm）的混凝土块。在该混凝土块上以20克/平方米的比例涂布一层混凝土保护层（由日本颜料株式会社<Nippon Paint K. K.>制造），该混凝土保护层含有50%的固体含量。用这层混凝土保护层作为碱保护剂（alkali-blocking agent）。下一步，用刷子将固体含量为35%的干酪素水溶液以大约60克/平方米的比例（当湿的时候）在该混凝土保护层上作为粘结剂涂布2次。用热的空气气流使该干酪素干燥，并将转印纸粘贴在这个混凝土块上。粘贴时，将该转印纸的有图像的那一面与混凝土块的表面相接触。

此后，用水把转印纸浸湿。换句话说，将水涂布到与有图像的那一面相反的一侧的表面上，以把这一表面弄湿，然后将转印纸剥离。图像层上的展示上述的比赛中的足球球员的图像这样被转印到该混凝土块的表面上。

然后在这幅足球球员图像的表面上以30克/平方米的比例（当湿的时候）涂敷固体含量为32%的水基聚氨基甲酸酯树脂（“Neodeluxe UW”牌，由株式会社大谷涂料<Otani TORYO K. K.>制造），并将该涂层进行干燥，这样形成一层保护膜。

经过约10分钟的干燥之后，以20克/平方米的比例将一种含有10%的紫外线吸收剂的氟树脂（“Newgarment #2300”，由户边株式会社<Tobe K. K.>制造）涂布到该保护膜上。

结果就获得了一块其上带有经久耐磨的足球球员在比赛中的图像的漂亮的混凝土块。

在该混凝土块的表面上可能有小的凹痕和凸起，但这些凹痕和凸起丝毫不影响该转印过程。

## 实施例2

使用与实施例1 相同的静电记录纸。 在实施例2中，对该记录纸进行预处理。首先以50克/平方米的比例（当湿的时候）在该静电记录纸上涂布一种10%的明胶溶液（粉状明胶，由野洲化学工业株式会社 <Yasu Kagaku Kogyo K. K. > 制造），然后用热的空气气流对该记录纸进行干燥。

下一步，将一幅著名的画—雷诺阿的“少女艾琳”印制在上述的经过预处理的静电记录纸上。这幅画是通过使用四种不同颜色（它们是青色、品红色、黄色和黑色）的水溶性染料、用一种虹彩机 (iris machine) (IRIS 3047 彩色喷射印制机，美国制造，由丸红电子株式会社 <Marubeni Electronics K. K. > 销售) 印制成的。这样就得到了一张转印纸。

上述的这幅雷诺阿的“少女艾琳”画所要贴附的物体是一块尺寸为130cm×150cm的铝制装饰板。以10克/平方米的比例在这块装饰板上涂敷一种用于金属的、固体含量为40%的溶剂型粘合剂（“Fuyube Mitshaku Binder M”，由关西颜料公司 <Kansai Paint K. K. > 制造），并将该板干燥。这就完成了预处理。然后，用喷枪以30g/m<sup>2</sup> 的比例将一种固体含量为30%的单份吸湿凝固的聚氨基甲酸乙酯粘结剂。

(a single-part moisture-setting polyurethane adhesive) (“Kyoresin S-1800”, 由协和化成株式会社 <Kyowa Kasai K. K. > 制造) 涂布到该装饰板上。

在上述这一粘结剂干燥之后 (其粘性仍旧保留), 将带有“少女艾琳”的画纸的画面粘贴到该铝板上。

下一步, 用水将这一转印纸弄湿 (更具体地说, 是把没有图案的那一面弄湿) 并以与实施例1 相同的方式将该转印纸剥去。结果这幅名画“少女艾琳”的图案就被转印到该铝制装饰板的表面上了。

然后以  $35 \text{ g/m}^2$  的比例在该图案的表面上涂覆一种固体含量为 35 % 的两份聚氨基甲酸乙酯树脂, 并进行干燥。结果就得到一层保护膜。

被这样转印了“少女艾琳”画的铝板非常漂亮, 就象原画一样。这样获得的图案在耐磨性方面是非常优秀的。

本发明最重要和特有的特点是使用静电记录纸。把呈现在这一静电记录纸上的图案和图像粘贴到一物体上而因此将其转印到该物体上。然后将该静电记录纸剥离, 在该物体上只留下图像层。不需要采用专门的设备, 且该转印方法非常简单。

正如从上文所见, 按照本发明, 任何所需的图案和图像可被非常耐久地贴置在所有处于不同地方的不同类型的物体上, 无论该物体是宽还是窄。例如将所需图案贴置在已建成的建策物的内表面和外表面上、玻璃窗上、电梯的内表面上、路面上等等。

更进一步说, 用本发明的方法可将漂亮和鲜艳的

图案和图像转印到物体的表面上，即使物体的表面很粗糙。此外，可在球面和其它曲面上进行图像的转印。还有，进行接续转印操作和多重转印操作（两倍，三倍，等等）也是可行的。因此，本发明的方法具有很宽的应用范围。

综上所述，本发明可改善所有类型的物体的装饰性能，在装璜工业方面是非常有用的。

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